(November 17, 1997)

Geosynthetic Properties For Retaining Walls and Reinforced Slopes

All geotextile properties provided in Table 7 are minimum average roll values. The average test results for any sampled roll in a lot shall meet or exceed the values shown in the table. The test procedures specified in the Table are in conformance with the most recently approved ASTM geotextile test procedures, except for geotextile sampling and specimen conditioning, which are in accordance with WSDOT Test Methods 914 and 915, respectively.

Table 7: Minimum properties required for geotextile reinforcement used in geosynthetic reinforced slopes and walls.

		Geotextile Property Requirements
Geotextile Property	**Test Method**	**Woven/Nonwoven**
Water Permittivity	ASTM D4491	.02 $sec.^{-1}$ min.
AOS	ASTM D4751	.84 mm max. (No. 20 Sieve)
Grab Tensile Strength, min. in machine and x-machine direction	ASTM D4632	200 lbs/120 lbs min.
Grab Failure Strain, in machine and x-machine direction	ASTM D4632	< 50% / $\geq$ 50%
Seam Breaking Strength[1]	ASTM D4632	160 lbs/100 lbs min.
Puncture Resistance	ASTM D4833	63 lbs/50 lbs min.
Tear Strength, min. in machine and x-machine direction	ASTM D4533	63 lbs/50 lbs min.
Ultraviolet (UV) Radiation Stability	ASTM D4355	70% (for polypropylene and polyethyelene) and 50% (for polyester) Strength Retained min., after 500 Hr. in weatherometer

[1]Applies only to seams perpendicular to the wall face.

For geogrids, the summation of the geogrid joint strengths determined in accordance with Geosynthetic Research Institute test method GRI:GG2 occurring in a 12 inches length of grid in the direction of loading (i.e., perpendicular to the wall face) shall be greater than or equal to the ultimate strength (T_{ult}) of the grid element to which they are attached. For this

determination, T_{ult} is to be determined using Geosynthetic Research Institute test method GRI:GG1. If the joint spacing is greater than or equal to 12 inches, two joints shall be included in this summation of joint strengths. The ultraviolet (UV) radiation stability, ASTM D4355, shall be a minimum of 70% strength retained after 500 hours in the weatherometer for polypropylene and polyethylene geogrids, and 50% strength retained after 500 hours in the weatherometer for polyester geogrids.